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CLAIMS

1. A device for use in a system for making intraluminal anastomoses between hollow structures by mechanical means, comprising an annular or tubular element separate from the hollow structures and including joining means formed circumferentially thereon for joining the abutting walls of the hollow structures together, wherein said annular element is permanently deformable from a first diameter in the starting position to a second, larger diameter in the joining position, and wherein said joining means comprises a number of pin-shaped elements which are circumferentially provided on said annular element, and which are movable or deformable between a starting position and a joining position in order to hold the abutting walls together.

2. A device according to claim 1, which is intended for intraluminal side-to-side anastomosis, wherein respectively two pin-shaped elements are provided at the same position, seen in circumferential direction, wherein at least the free ends of two associated pin-shaped elements are spaced apart in the starting position, seen in axial direction, whilst they have been moved together in the joining position.

3. A device according to claim 1, wherein said annular element is made up of at least one elongated element having a length dimension which is greater than the circumferential dimension of said annular element in the first diameter and which is at least equal to the circumferential dimension of said annular element in the second diameter, which element extends along a line which deviates from a contour line in the first diameter and which can be straightened so as to extend along a line which resembles the contour line more closely.

4. A device according to claim 3, wherein said elongated element extends sinusoidally or in a different zigzag-like fashion.

5. A device according to claim 4, wherein two zigzag-like elements are arranged side by side in axial direction, which elements are interconnected near their vertices facing each other, and wherein the pin-shaped elements are fixed to the vertices that face away from each other

6. A device according to claim 1, which is intended for making an intraluminal side-to-side anastomosis or an end-to-side anastomosis, wherein the pin-shaped elements extend at least substantially axially in the starting position and wherein said pin-shaped elements can be bent to the joining position deviating from the axial position, for example a substantially radial or tangential position or the like, so as to make a joint.

7. An applicator for use with a device for making anastomoses between hollow structures by mechanical means according to claim 1, comprising:

a shank-like element; a head connected to the distal end of the shank-like element for supporting and activating joining means of the device to be provided thereon, said head having radially expandable means which are expandable from a first diameter supporting the device in a starting position to a second, larger diameter, arid having axially contractible means adapted to move or deform said joining means of the device from the starting position to the joining position in order to hold abutting walls of the hollow structures together; and control means for controlling the radially expandable and axially contractible means, of the head.

8. An applicator according to claim 7, wherein the head can be adjusted in such a manner that the pin-shaped elements of the device are moved or deformed from the starting position to the joining position when said adjusting takes place.

9. An applicator according to claim 7 or 8, which is intended for placing a device having axially opposed pin-shaped elements, wherein said contractible means are adapted to move opposed pin-shaped elements towards each other.

10. An applicator according to one of claims 7 - 9, wherein the expandable and contractible means of said head is provided with two axially spaced-apart hubs comprising arms arranged in a star-like fashion thereon, which hubs are movable in axial direction with respect to each other, wherein the arms of the two hubs are pivotally interconnected at a point some distance away from their free ends so as to form clamps.

11. An applicator according to claim 10, wherein said head is circumferentially provided with a number of equally spaced elements, such as wedges, around which the device can be placed, and which can be moved axially and radially outwards by means of a control element, whereby the device is expanded in radial direction and contracted in axial direction.

12. An applicator according to claim 7, which applicator comprises a shank-like element and a head, which is fitted with a detainer for stopping the device in axial direction, and axially movable deflector means for deflecting the pin-shaped elements.

13. An applicator according to claim 12, wherein said detainer is a hollow shaft or ring, and wherein said axially movable deflector means are provided with two axially spaced-apart hubs which are axially movable with respect to each other and to the detainer, on which hubs arms are arranged in a star-like fashion, wherein the arms of the two hubs are pivotally interconnected.

14. An applicator according to claim 13, wherein said detainer is a hollow shaft or ring, and wherein said axially movable deflector means are provided with a number of circumferentially provided, substantially radially disposed wedges on the hub, which are each capable of

pivoting movement about a substantially tangential axis in the direction of said detainer.